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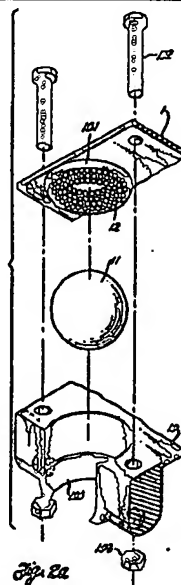
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⑤④ Skating device.

⑤⑦ A skating device includes a plurality of bearings (10). Each bearing comprises a solid rolling ball which engages a support cushion (101) having a lining of small balls (12).



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Description

SKATING DEVICE

The present invention relates to a skating device, (a ball trek) which can be ridden in any direction. This enables skating skills improvement and safety, and allows beginners to skate with a sophisticated motion.

Known skating devices are generally designed with two types of structures. One is a roller skate which uses four rolling wheels for skating on a flat surface, and the other one is an ice skate or figure skate which uses a blade or a runner for skating on a planar ice surface.

The user who uses the above-mentioned skates can skate only in forward or backward directions and cannot quickly and easily turn to the left or to the right. Ice skates may be used by a skillful skater to turn on a point but ice skates are not easy for beginners to control.

In addition, when a user is skating forward quickly, whether on ice skates or rollers skates, it is difficult for him to make a swift right or left turn, unless he skates in a circular direction as indicated in Fig. 1. The faster the user is skating, the larger the radius of the circle required to turn. This movement is particularly tricky and dangerous for beginners.

It is therefore an object of the present invention to provide an improved skating device (ball trek) capable of rolling in any direction.

It is another object of the present invention to provide a ball trek with which a user can change direction swiftly and suddenly without skating in a circle as the prior arts required.

It is further an object of the present invention to provide a ball trek capable of permitting sophisticated motion for beginners, such as safely turning on a point.

According to the present invention there is provided a skating device or ball trek comprising a base panel body, a shoe sole plate provided on said base panel body and a plurality of bearings, at least three of which are arranged in a triangular position for supporting and balancing the sole plate, integrally provided under the base panel body. The above-mentioned components are fixed firmly with a plurality of screws and nuts. Each of the bearings has a ball-shaped solid rolling means rotatably and securely received therein, whereby the rolling balls can be adapted to roll on a planar surface to allow the ball trek to move in any direction.

The bearing further includes a cushion member having a curved inner surface attached firmly to the sole plate and a plurality of small balls retained between the cushion and the solid rolling ball, wherein the rolling ball is partially received in the cushion, partially secured in the bearing and partially protruded out of the bearing. The bearing further has an inwardly bent rim portion of which the curvature corresponds to the outer curvature of the solid rolling ball.

The sole plate further includes an upwardly projecting portion adapted to retain the user's heel and a plurality of shoe-straps for securing the user's

shoe.

The bearings with the solid rolling ball can number more than three and are positioned under the sole base panel body according to geometric principles to balance the ball trek properly.

By the above described arrangement, the skating device can be used to roll in any direction according to the user's desire so that the user can skate safely and in a sophisticated manner.

A skating device embodying the present invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings, in which:

Fig. 1 is the circular movement that a user must make if he needs to change direction with prior art skating devices;

Fig. 2a is an exploded view of the bearing and rolling means of the skating device embodying the invention;

Fig. 2b is a partial cross-section view of the skating device showing the arrangement of the bearing which receives the rolling means;

Fig. 3 is a perspective view of the skating device;

Fig. 4 is an underplan view of Fig. 3 showing three bearings with rolling means provided under the base panel and arranged in a triangular position;

Fig. 5 is a perspective view of another skating device embodying the invention; and

Fig. 6 is an underplan view of the device of Fig. 5 with a plurality of rolling means.

Referring to Fig. 3 and Fig. 4 in conjunction with Fig. 2a and Fig. 2b, the skating device includes a base panel body 15, a shoe sole plate 1 provided on the base panel body 15 and three bearings 10 which are arranged in a triangular position integrally provided on the base panel body 15, wherein the sole plate 1, the base panel body 15 and the bearings 10 are fixed firmly through a plurality of screws 102 and nuts 103.

Each of the bearings 10 has a ball shaped solid rolling means 11 rotatably and securely received in the bearings 10, whereby the rolling balls 11 can be placed on a planar surface for rolling the device in any direction. The bearing 10 further includes a cushion member 101 having a curved inner surface attached firmly to the sole plate 1 and a plurality of small balls 12 retained between the cushion 101 and the solid rolling ball 11, so that the rolling ball 11 is partially received in the cushion 101, partially secured in the bearing 10 and partially protruded out of the bearing 10. The bearing 10 further has an inwardly bent rim portion 104 of which the curvature corresponds to the outer curvature of the solid rolling ball 11.

The sole plate further includes an upwardly projecting portion 2 at its back portion and side portion arranged to retain the user's heel and a plurality of shoe-straps 3 for securing the user's shoe.

With the above described arrangement, the device will roll freely in any direction according to the user's desire to provide a safe and sophisticated movement.

The bearings 10 with the solid rolling ball 11 can be designed to number more than three and are positioned under the sole plate 1 and base panel 15 according to geometric principles, as shown in Fig. 5 and Fig. 6 to balance the skating device properly.

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Claims

1. A skating device comprising a base panel body; a shoe sole plate provided on said base panel body; and a plurality of bearings provided within said base panel body; each of said bearings having a ball-shaped solid member rotatably and securely received in said bearing, a cushion member having a curved inner surface attached firmly to said sole plate, and a plurality of small balls retained between said cushion member and the upper segmental surface of said ball-shaped solid member, wherein said ball-shaped solid member is partially received in said cushion member, partially secured in said bearing and partially protruded out of said bearing, said base panel body, said sole plate and said bearings are fixed firmly so that said ball-shaped solid member can be placed on a planar surface for rolling said skating device in any direction.

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2. A skating device as claimed in Claim 1 in which each of said bearings further has an inwardly bent rim portion for retaining said solid rolling ball securely, wherein the curvature of said inwardly bent rim portion corresponds to the curvature of said solid rolling ball.

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3. A skating device as claimed in Claim 1 or Claim 2 wherein said bearings are integrally provided within said base panel body and arranged in a triangular position for supporting and balancing said skating device on said planar surface.

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4. A skating device as claimed in any one of Claims 1 to 3 wherein said sole plate further includes an upwardly projecting portion adapted to retain the user's heel and a plurality of shoe straps.

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5. A skating device wherein said plurality of bearings comprises three in number.

6. A skating device comprising a support member, and a plurality of ground engaging bearings, each bearing comprising a solid ball nested in an array of smaller balls lining the curved surface of a cushion member, and having a ground engaging portion projecting from the support member.

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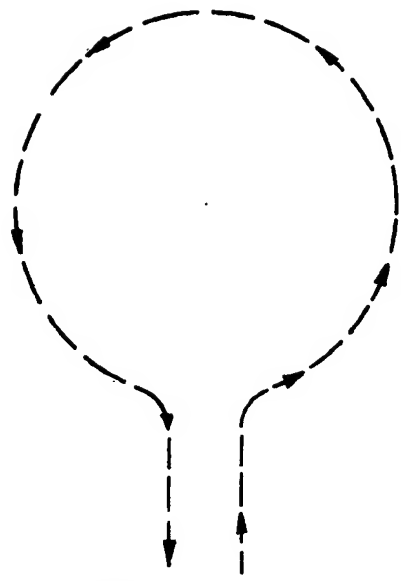


Fig. 1

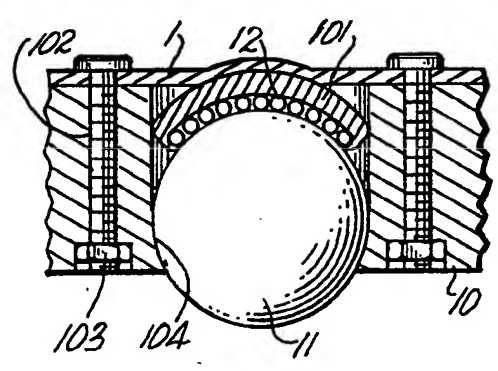


Fig. 2b

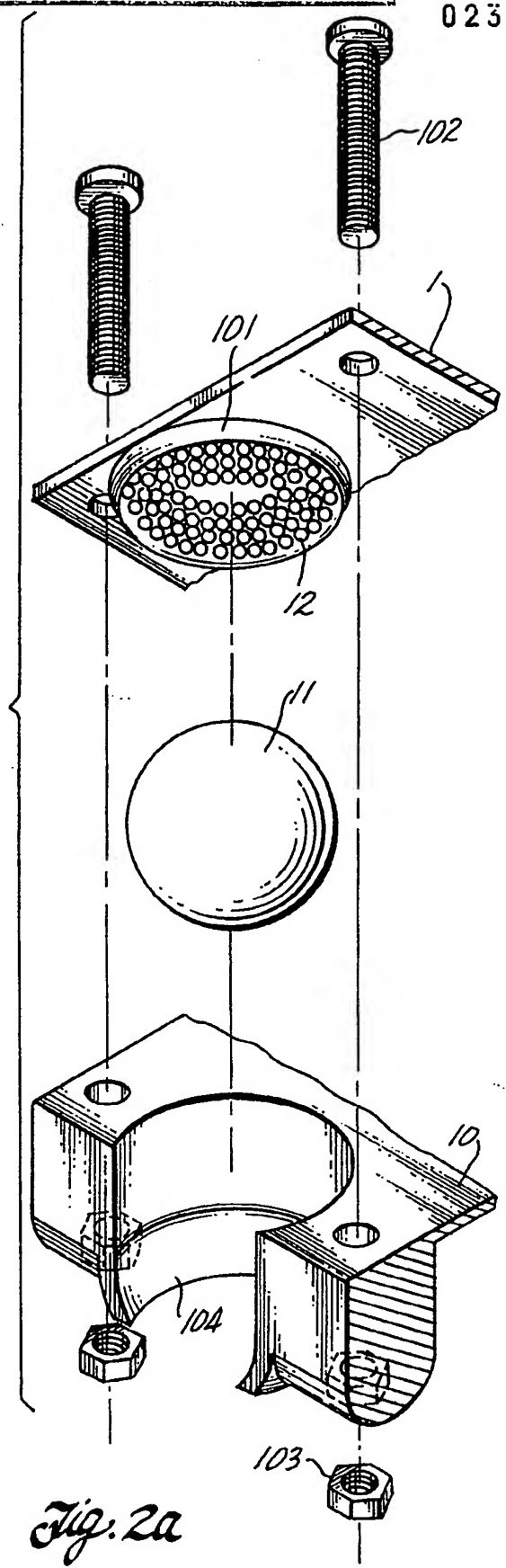


Fig. 2a

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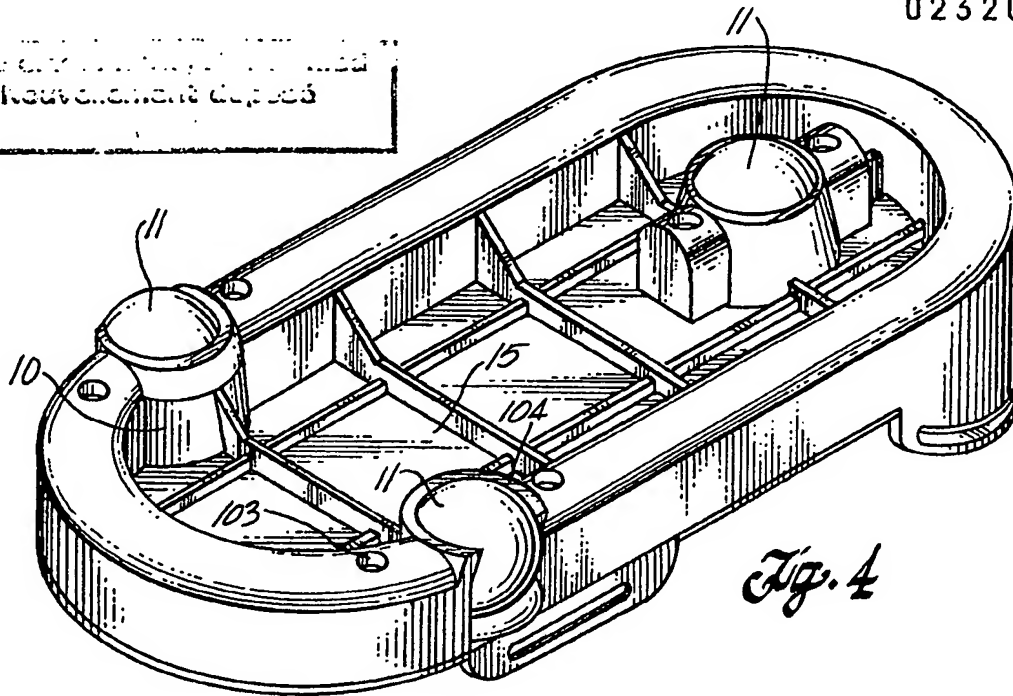


Fig. 4

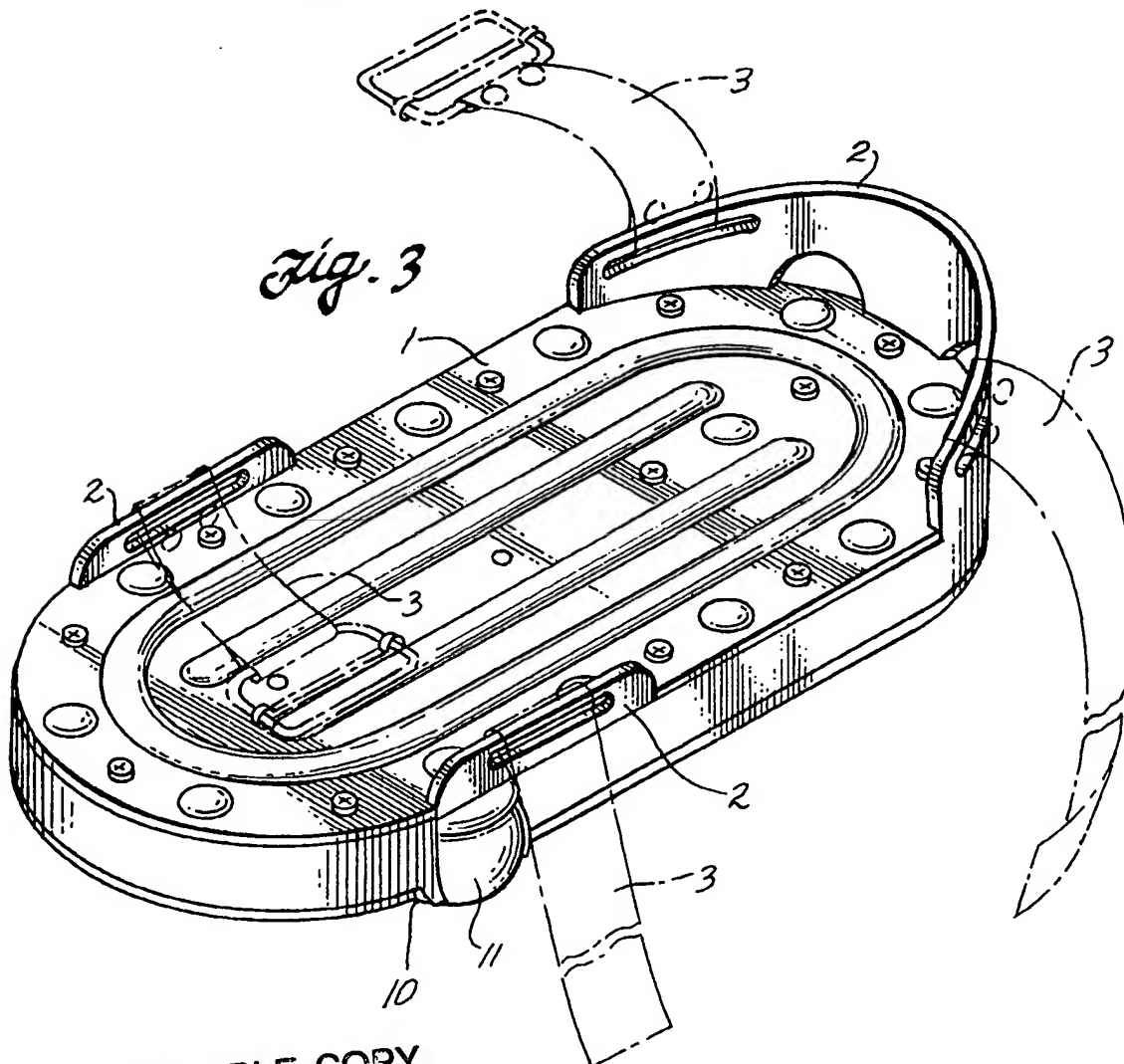


Fig. 3

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Fig. 5

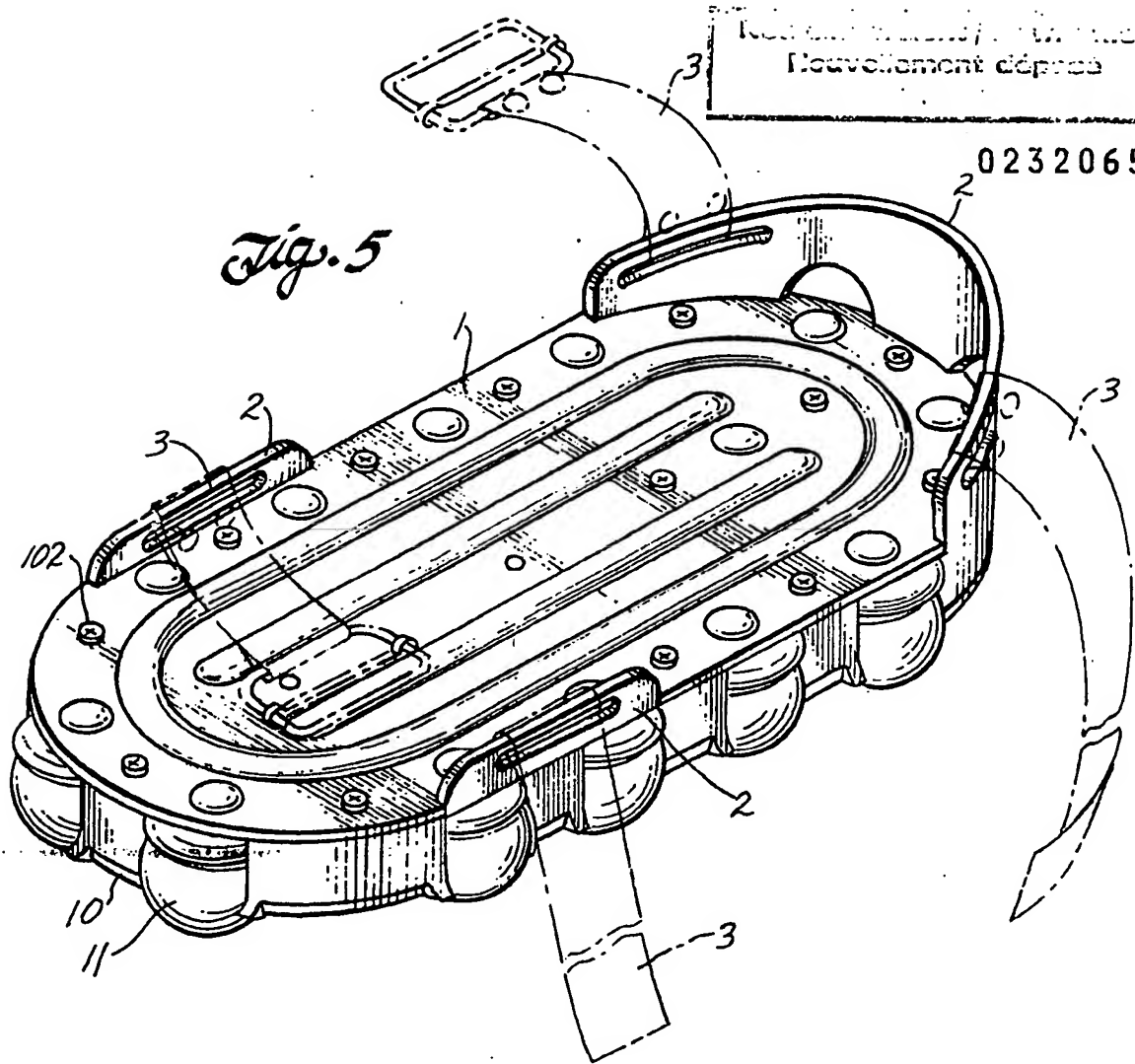


Fig. 6

